

GAATCCCCCAACAGAGCCAAGCTCTCCATCTAGTGGACAGGGAAGCTAGCAGCAAACC
TTCCCTTCACTACAAAACCTTCATTGCTTGGCCAAAAAGAGAGTTAATTCAATGTAGACAT
CTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTTGCATTCATGGAGGGCAAC
TAAATACATTCTAGGACTTTATAAAAGATCACTTTTTATTTATGCACAGGGTGAACAAG
ATGGATTATCAAGTGTCAAGTCCAATCTATGACATCAATTATTATACATCGGAGCCCTGC
M D Y Q V S S P I Y D I N Y Y T S E P C
CAAAAATCAATGTGAAGCAAATCGCAGCCCGCCTCCTGCCTCCGCTCTACTCACTGGTG
Q K I N V K Q I A A R L L P P L Y S L V
TTCATCTTTGGTTTTGTGGGCAACATGCTGGTCATCCTCATCCTGATAAACTGCAAAAGG
F I F G F V G N M L V I L I L I N C K R
CTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTTCCTT
K S M T D I Y L L N L A I S D L F F L
CTTACTGTCCCCTTCTGGGCTCACTATGCTGCCGCCAGTGGGACTTTGGAAATACAATG
T V P F W A H Y A A A Q W D F G N T M
TGTCAACTCTTGACAGGGCTCTATTTTATAGGCTTCTTCTCTGGAATCTTCTTCATCATC
G Q L L T G L Y F I G F F S G I F F I I
CTCCTGACAATCGATAGGTACCTGGCTGTGCTCCATGCTGTGTTTGCTTTAAAGCCAGG
L L T I D R Y L A V V H A V F A L K A R
ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTGGTGGCTGTGTTTGCGTCT
T V T F G V V T S V I T W V V A V F A S
CTCCCAGGAATCATCTTTACCAGATCTCAAAAAGAAGGTCTTCATTACACCTGCAGCTCT
L P G I I F T R S Q K E G L H Y T C S S
CATTTTCCATACA
H F P Y

59(UPPER:SEQ ID NO.1)
19(LOWER:SEQ ID NO.4)

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GAATTCCCCAACAGAGCCAAGCTCTCCATCTAGTGGACAGGGAAGCTAGCAGCAAACC	59(UPPER:SER 1) NO2
	19(LOWER:SEQ ID) NO5
TTCCCTTCACTACAAAACCTTCATTGCTTGGCCAAAAAGAGAGTTAATTCAATGTAGACAT	119
	39
CTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTTGCATTTCATGGAGGGCAAC	179
	59
TAAATACATTCTAGGACTTTATAAAAGATCACTTTTTATTTATGCACAGGGTGGAACAAG	239
	79
ATGGATTATCAAGTGTCAAGTCCAATCTATGACATCAATTATTATACATCGGAGCCCTGC	299
M D Y Q V S S P I Y D I N Y Y T S E P C	99
CAAAAAATCAATGTGAAGCAAATCGCAGCCCGCCTCCTGCCTCCGCTCTACTCACTGGTG	359
Q K I N V K Q I A A R L L P P L Y S L V	119
TTTCATCTTTGGTTTTGTGGGCAACATGCTGGTCATCCTCATCCTGATAAACTGCAAAAGG	419
F I F G F V G N M L V I L I L I N C K R	139
GTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTTCCTT	479
L K S M T D I Y L L N L A I S D L F F L	159
CTTACTGTCCCCTTCTGGGCTCACTATGCTGCCGCCAGTGGGACTTTGGAAATACAATG	539
L T V P F W A H Y A A A Q W D F G N T M	179
GTGCAACTCTTGACAGGGCTCTATTTTATAGGCTTCTTCTCTGGAATCTTCTTCATCATC	599
C Q L L T G L Y F I G F F S G I F F I I	199
CTCCTGACAATCGATAGGTACCTGGCTGTGCTCCATGCTGTGTTTGCTTTAAAAGCCAGG	659
L L T I D R Y L A V V H A V F A L K A R	219
ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACTTGGGTGGTGGCTGTGTTTGCCTCT	719
T V T F G V V T S V I T W V V A V F A S	239
CTCCCAGGAATCATCTTTACCAGATCTCAAAAAGAAGGTCTTCATTACACCTGCAGCTCT	779
L P G I I F T R S Q K E G L H Y T C S S	259
CATTTTCCATACAGTCAGTATCAATTCTGGAAGAATTTCCAGACATTAAAGATAGTCATC	839
H F P Y S Q Y Q F W K N F Q T L K I V I	279

SEQ ID NO.2 FIG.1b

TTGGGGCTGGTCCTGCCGCTGCTTGTCATGGTCATCTGCTACTCGGGAATCCTAAAAACT	899
L G L V L P L L V M V I C Y S G I L K T	299
CTGCTTCGGTGTCGAAATGAGAAGAAGAGGCACAGGGCTGTGAGGCTTATCTTCACCATC	959
L L R C R N E K K R H R A V R L I F T I	319
ATGATTGTTTATTTTCTCTTCTGGGCTCCCTACAACATTGTCTCTCTCCTGAACACCTTC	1019
M I V Y F L F W A P Y N I V L L L N T F	339
CAGGAATTCTTTGGCCTGAATAATTGCAGTAGCTCTAACAGGTTGGACCAAGCTATGCAG	1079
Q E F F G L N N C S S S N R L D Q A M Q	359
GTGACAGAGACTCTTGGGATGACGCACTGCTGCATCAACCCCATCATCTATGCCTTTGTC	1139
V T E T L G M T H C C I N P I I Y A F V	379
GGGGAGAAGTTCAGAAACTACCTCTTAGTCTTCTTCCAAAAGCACATTGCCAAACGCTTC	1199
G E K F R N Y L L V F F Q K H I A K R F	399
TGCAAATGCTGTTCTATTTTCCAGCAAGAGGCTCCCGAGCGAGCAAGCTCAGTTTACACC	1259
C K C C S I F Q Q E A P E R A S S V Y T	419
CGATCCACTGGGGAGCAGGAAATATCTGTGGGCTTGTGACACGGACTCAAGTGGGCTGGT	1319
R S T G E Q E I S V G L *	439
GACCCAGTCAGAGTTGTGCACATGGCTTAGTTTTTCATACACAGCCTGGGCTGGGGGTNGG	1379
	459
TTGGNNGAGGTCTTTTTTAAAAGGAAGTTACTGTTATAGAGGGTCTAAGATTCATCCATT	1439
	479
TAATTTGGCATCTGTTTAAAGTAGATTAGATCCGAATTC	

SEQ ID NO.2 (SUITE)

FIG.1c

GAATTCCCCCAACAGAGCCAAGCTCTCCATCTAGTGGACAGGGAAGCTAGCAGCAAACC
 TTCCTTCACTACAAAACCTTCATTGCTTGGCCAAAAAGAGAGTTAATTCAATGTAGACAT
 CTATGTAGGCAATTAAAAACCTATTGATGTATAAAACAGTTTGCATTTCATGGAGGGCAAC
 TAAATACATTCTAGGACTTTATAAAAGATCACTTTTTTATTTATGCACAGGGTGGAACAAG
 ATGGATTATCAAGTGTCAAGTCCAATCTATGACATCAATTATTATACATCGGAGCCCTGC
 M D Y Q V S S P I Y D I N Y Y T S E P C
 CAAAAAATCAATGTGAAGCAAATCGCAGCCCGCCTCCTGCCTCCGCTCTACTCACTGGTG
 Q K I N V K Q I A A R L L P P L Y S L V
 TTCATCTTTGGTTTTGTGGGCAACATGCTGGTCATCCTCATCCTGATAAACTGCAAAGG
 F I F G F V G N M L V I L I L I N C K R
 GTGAAGAGCATGACTGACATCTACCTGCTCAACCTGGCCATCTCTGACCTGTTTTTCCTT
 L K S M T D I Y L L N L A I S D L F F L
 GTTACTGTCCCCTTCTGGGCTCACTATGCTGCCGCCAGTGGGACTTTGGAAATACAATG
 L T V P F W A H Y A A A Q W D F G N T M
 GTCAACTCTTGACAGGGCTCTATTTTATAGGCTTCTTCTCTGGAATCTTCTTCATCATC
 C Q L L T G L Y F I G F F S G I F F I I
 CTCCTGACAATCGATAGGTACCTGGCTGTCGTCCATGCTGTGTTTGCTTTAAAAGCCAGG
 L L T I D R Y L A V V H A V F A L K A R
 ACGGTCACCTTTGGGGTGGTGACAAGTGTGATCACCTGGGTGGTGGCTGTGTTTGCCTCT
 T V T F G V V T S V I T W V V A V F A S
 CTCCCAGGAATCATCTTTACCAGATCTCAAAAAGAAGGTCTTCATTACACCTGCAGCTCT
 L P G I I F T R S Q K E G L H Y T C S S
 CATTTTCCATACATTAAAGATAGTCATCTTGGGGCTGGTCCTGCCGCTGCTTGTTCATGGT
 H F P Y I K D S H L G A G P A A A C H G

59(UPPER:SEQ ID NO.3)
 19(LOWER:SEQ ID NO.6)

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SEQ ID NO.3

FIG.1d

CATCTGCTACTCGGGAATCCTAAAACTCTGCTTCGGTGTGAAATGAGAAGAAGAGGCA	899
H L L L G N P K N S A S V S K *	299
CAGGGCTGTGAGGCTTATCTTCACCATCATGATTGTTTATTTTCTCTTCTGGGCTCCCTA	959
	319
CAACATTGTCCTTCTCCTGAACACCTTCCAGGAATTCTTTGGCCTGAATAATTGCAGTAG	1019
	339
CTCTAACAGGTTGGACCAAGCTATGCAGGTGACAGAGACTCTTGGGATGACGCACTGCTG	1079
	359
CATCAACCCCATCATCTATGCCCTTTGTCGGGGAGAAGTTCAGAACTACCTCTTAGTCTT	1139
	379
CTTCCAAAAGCACATTGCCAAACGCTTCTGCAAATGCTGTTCTATTTTCCAGCAAGAGGC	1199
	399
TCCCGAGCGAGCAAGCTCAGTTTACACCCGATCCACTGGGGAGCAGGAAATATCTGTGGG	1259
	419
CTGTGACACCGACTCAAGTGGGCTGGTGACCCAGTCAGAGTTGTGCACATGGCTTAGTT	1319
	439
TTTCATACACAGCCTGGGCTGGGGGTNGGTTGGNNGAGGTCTTTTTTAAAAGGAAGTTACT	1379
	459
GTTATAGAGGGTCTAAGATTCATCCATTTATTTGGCATCTGTTTAAAGTAGATTAGATCC	1439
	479
GAATTC	

SEQ ID NO.3 (SUITE)

FIG.1e

FIG. 2

I

CCR5	1	M	Q	V	S	S	P	I	D	I	N	Y	T	S	E	F	C	Q	K	I	N	V	K	Q	I	A	R	L	P	P	L	S	L	V	E	I	F	G	V	G	N	M	L	V	I	L	I	N	C	K	R	L	K	S	M	T	D	I	Y	L	L	N	L	A	I	S	D	I	F	I	T	I	83													
hcc-R2b		M	L	S	T	S	R	S	R	F	T	R	N	E	S	G	E	E	V	T	T	F	F	Y	D	Y	G	A	P	C	I	K	F	T	V	K	Q	I	A	R	L	P	P	L	S	L	V	E	I	F	G	V	G	N	M	L	V	I	L	I	N	C	K	R	L	K	S	M	T	D	I	Y	L	L	N	L	A	I	S	D	I	F	I	T	I	95
hcc-R3		M	T	T	S	I	I	V	E	T	F	G	T	S	Y	D	D	V	G	L	I	E	K	A	D	T	R	A	L	M	A	Q	F	V	P	P	L	S	L	V	E	I	F	G	V	G	N	M	L	V	I	L	I	N	C	K	R	L	K	S	M	T	D	I	Y	L	L	N	L	A	I	S	D	I	F	I	T	I	8							
hcc-R1		M	E	T	P	N	T	E	D	Y	D	T	T	E	F	C	Y	G	D	A	T	P	C	Q	K	I	N	V	K	Q	I	A	R	L	P	P	L	S	L	V	E	I	F	G	V	G	N	M	L	V	I	L	I	N	C	K	R	L	K	S	M	T	D	I	Y	L	L	N	L	A	I	S	D	I	F	I	T	I	87							
hcc-R4		M	N	P	T	D	I	A	D	T	L	D	E	S	I	S	N	Y	L	E	S	I	P	K	E	G	I	K	A	F	G	E	L	P	P	L	S	L	V	E	I	F	G	V	G	N	M	L	V	I	L	I	N	C	K	R	L	K	S	M	T	D	I	Y	L	L	N	L	A	I	S	D	I	F	I	T	I	92								

III

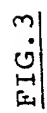
CCR5	V	P	F	W	A	H	Y	A	A	Q	M	D	E	G	N	I	M	C	Q	L	L	T	G	I	Y	F	I	G	F	F	S	G	I	F	F	T	I	L	T	I	D	R	Y	A	M	V	H	A	V	F	A	I	K	A	R	T	V	T	F	G	V	T	S	V	I	T	W	V	A	V	E	A	S	L	P	G	I	I	F	I	R	I	K	E	G	I	I	177
hcc-R2b	I	P	L	W	A	I	F	A	A	N	E	W	F	G	N	A	M	C	K	I	F	T	G	L	Y	H	I	G	Y	E	F	A	I	I	F	F	I	L	T	I	D	R	Y	A	M	V	H	A	V	F	A	I	K	A	R	T	V	T	F	G	V	T	S	V	I	T	W	V	A	V	E	A	S	L	P	G	I	I	F	I	R	I	K	E	G	I	I	189
hcc-R3	I	P	F	W	I	H	Y	V	R	G	I	N	W	F	C	H	C	M	N	L	I	S	G	F	Y	H	T	C	L	Y	E	E	I	F	F	I	L	T	I	D	R	Y	A	M	V	H	A	V	F	A	I	K	A	R	T	V	T	F	G	V	T	S	V	I	T	W	V	A	V	E	A	S	L	P	G	I	I	F	I	R	I	K	E	G	I	I	182	
hcc-R1	I	P	F	W	I	H	Y	V	R	G	I	N	W	F	C	H	C	M	N	L	I	S	G	F	Y	H	T	C	L	Y	E	E	I	F	F	I	L	T	I	D	R	Y	A	M	V	H	A	V	F	A	I	K	A	R	T	V	T	F	G	V	T	S	V	I	T	W	V	A	V	E	A	S	L	P	G	I	I	F	I	R	I	K	E	G	I	I	182	
hcc-R4	I	P	F	W	G	Y	A	A	I	Q	M	V	F	C	L	G	I	C	K	M	I	S	W	M	L	V	G	E	F	Y	S	G	I	F	F	I	L	T	I	D	R	Y	A	M	V	H	A	V	F	A	I	K	A	R	T	V	T	F	G	V	T	S	V	I	T	W	V	A	V	E	A	S	L	P	G	I	I	F	I	R	I	K	E	G	I	I	186	

VI

CCR5	YTC	I	F	E	P	Y	S	Q	Y	Q	F	W	K	N	F	O	T	L	K	I	V	I	L	G	L	V	I	P	L	L	V	M	I	C	Y	S	G	I	L	K	T	I	L	R	C	R	N	E	K	R	H	R	A	V	R	L	I	F	T	I	M	I	V	E	L	F	W	A	P	Y	N	I	V	L	L	I	N	T	F	Q	E	E	F	G	I	N	C	272
hcc-R2b	I	M	G	I	P	H	G	...	M	N	E	H	I	T	M	R	N	I	G	L	V	I	P	L	I	M	V	I	C	S	G	I	L	K	T	I	L	R	C	R	N	E	K	R	H	R	A	V	R	L	I	F	T	I	M	I	V	E	L	F	W	A	P	Y	N	I	V	L	L	I	N	T	F	Q	E	E	F	G	I	N	C	280						
hcc-R3	T	I	D	A	L	Y	E	D	F	V	Y	W	R	H	I	I	P	T	I	R	M	T	I	F	C	L	V	I	P	L	L	V	M	I	C	Y	H	G	I	K	F	L	L	R	C	P	E	S	K	Y	K	I	L	I	F	I	M	A	V	E	F	I	F	W	A	P	Y	N	I	V	L	L	I	N	T	F	Q	E	E	F	G	I	N	C	27			
hcc-R1	H	C	S	I	F	E	S	L	R	E	W	K	L	F	C	A	L	K	L	N	L	F	G	L	V	L	P	L	L	V	M	I	C	Y	H	G	I	K	F	L	L	R	R	N	E	K	K	S	K	A	V	R	L	I	F	I	M	I	F	E	L	F	W	A	P	Y	N	I	V	L	L	I	N	T	F	Q	E	E	F	G	I	N	C	276				
hcc- R4	T	Y	C	K	T	K	Y	S	I	N	S	T	...	T	W	K	V	L	S	S	E	I	N	I	L	G	L	V	I	P	L	L	V	M	I	C	Y	H	G	I	K	F	L	L	R	C	P	E	S	K	Y	K	I	L	I	F	I	M	A	V	E	F	I	F	W	A	P	Y	N	I	V	L	L	I	N	T	F	Q	E	E	F	G	I	N	C	279		

VII

CCR5	S	E	S	I	N	I	D	Q	A	M	Q	V	T	E	L	G	M	T	H	C	C	I	N	P	I	I	Y	A	F	V	G	E	K	F	R	N	Y	L	L	V	E	F	C	K	H	I	A	K	R	F	C	R	C	S	I	F	E	Q	A	E	R	A	S	S	V	T	K	S	T	G	E	Q	E	I	S	V	31
hcc-R2b		F	E	S	Q	...	D	Q	A	I	Q	V	T	E	L	G	M	T	H	C	C	I	N	P	I	I	Y	A	F	V	G	E	K	F	R	N	Y	L	L	V	E	F	C	K	H	I	A	K	R	F	C	R	C	S	I	F	E	Q	A	E	R	A	S	S	V	T	K	S	T	G	E	Q	E	I	S	V	360
hcc-R3		F	E	S	Q	...	D	Q	A	I	Q	V	T	E	L	G	M	T	H	C	C	I	N	P	I	I	Y	A	F	V	G	E	K	F	R	N	Y	L	L	V	E	F	C	K	H	I	A	K	R	F	C	R	C	S	I	F	E	Q	A	E	R	A	S	S	V	T	K	S	T	G	E	Q	E	I	S	V	355
hcc-R1		F	E	S	Q	...	D	Q	A	I	Q	V	T	E	L	G	M	T	H	C	C	I	N	P	I	I	Y	A	F	V	G	E	K	F	R	N	Y	L	L	V	E	F	C	K	H	I	A	K	R	F	C	R	C	S	I	F	E	Q	A	E	R	A	S	S	V	T	K	S	T	G	E	Q	E	I	S	V	355
hcc-R4		T	F	E	R	Y	L	D	A	I	Q	A	T	E	T	A	F	V	H	C	C	I	N	P	I	I	Y	A	F	V	G	E	K	F	R	N	Y	L	L	V	E	F	C	K	H	I	A	K	R	F	C	R	C	S	I	F	E	Q	A	E	R	A	S	S	V	T	K	S	T	G	E	Q	E	I	S	V	360



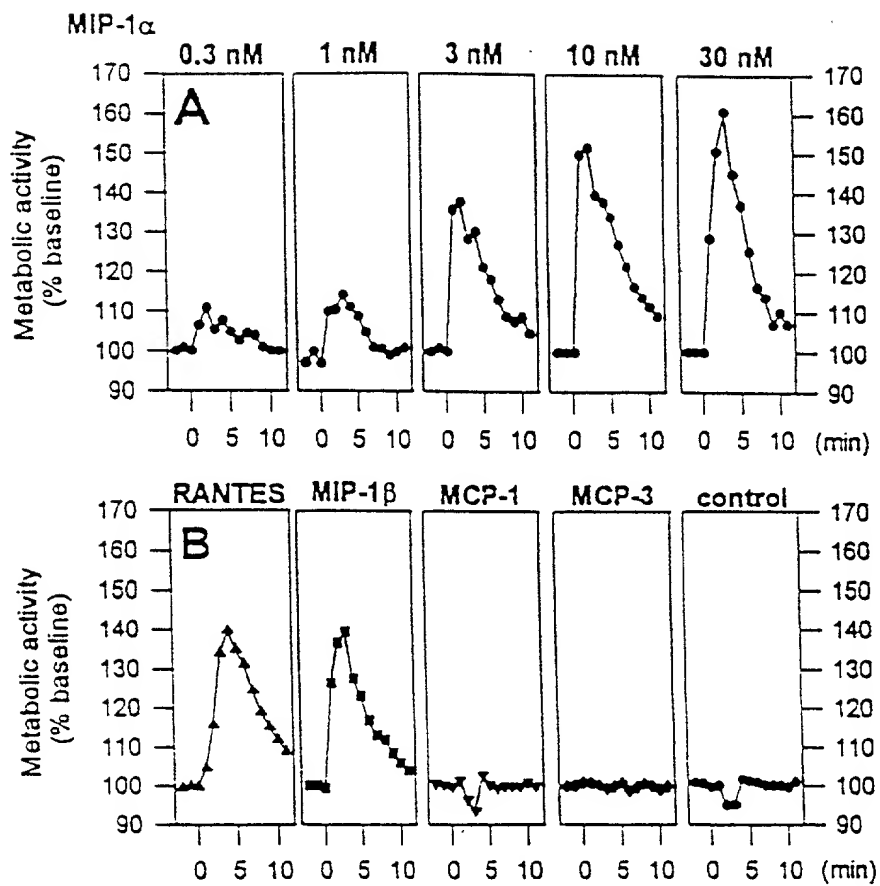


FIG. 4a

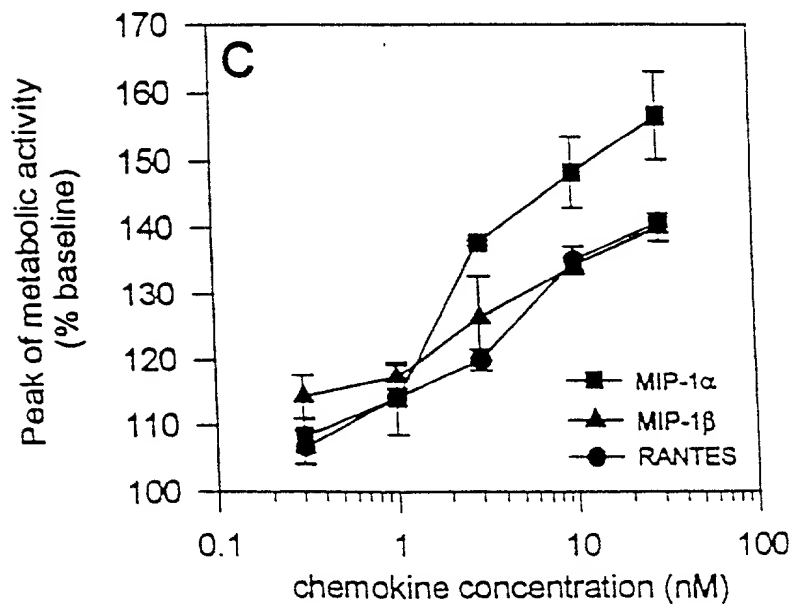


FIG. 4b

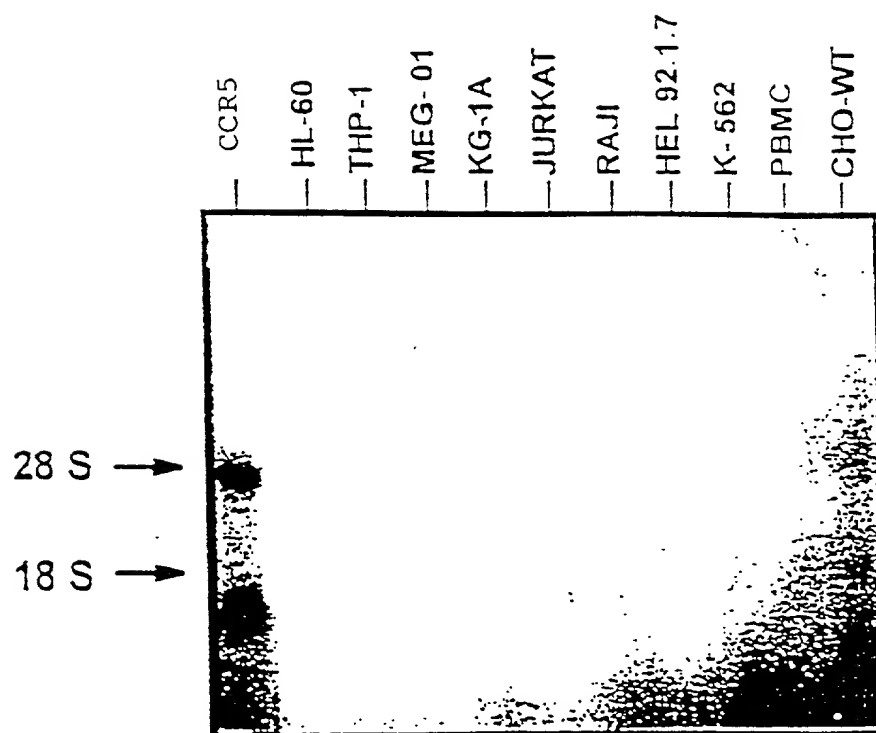


FIG. 5

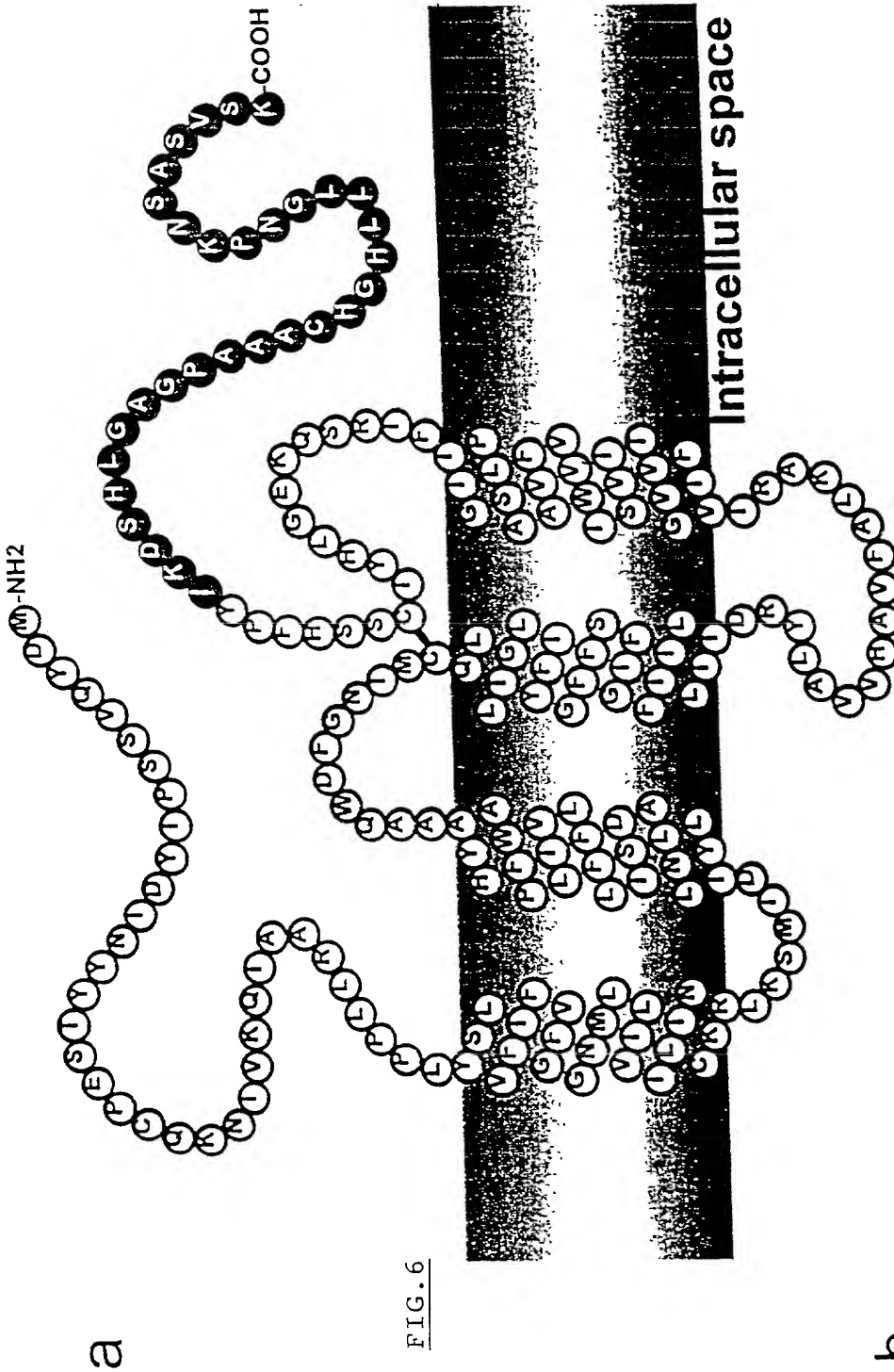
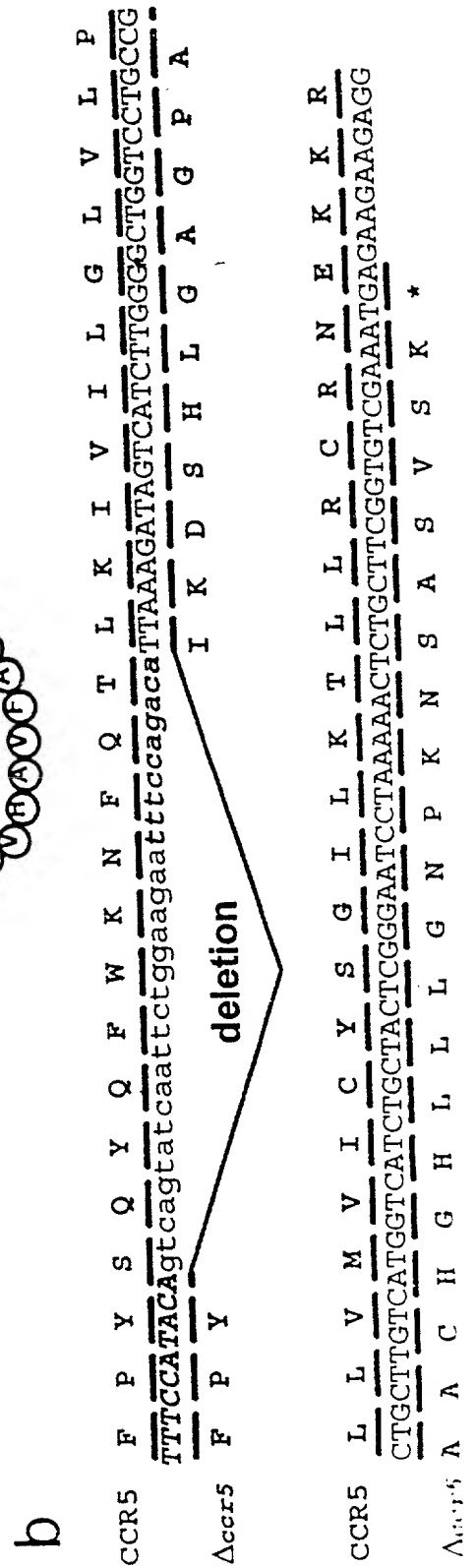


FIG. 6



A.

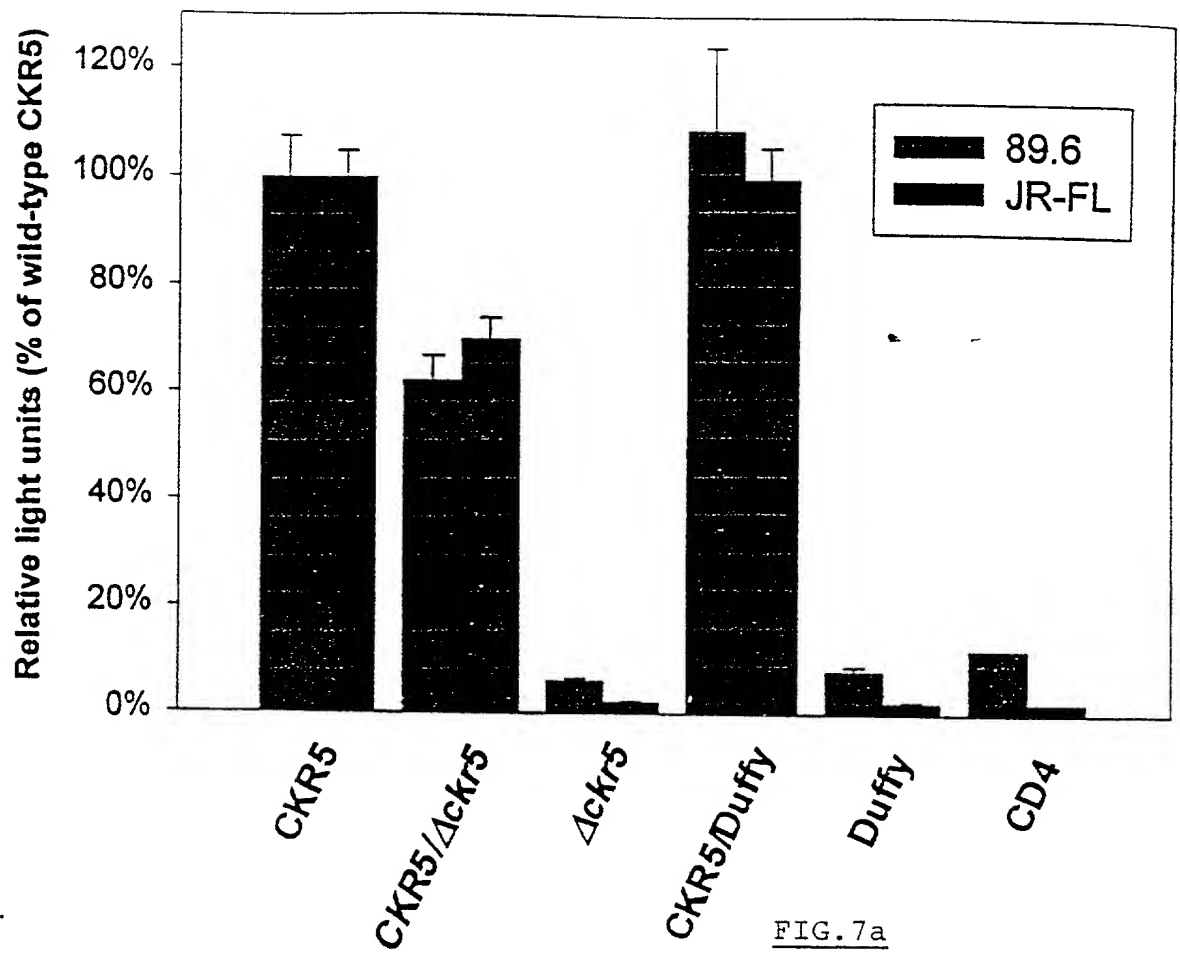


FIG. 7a

B.

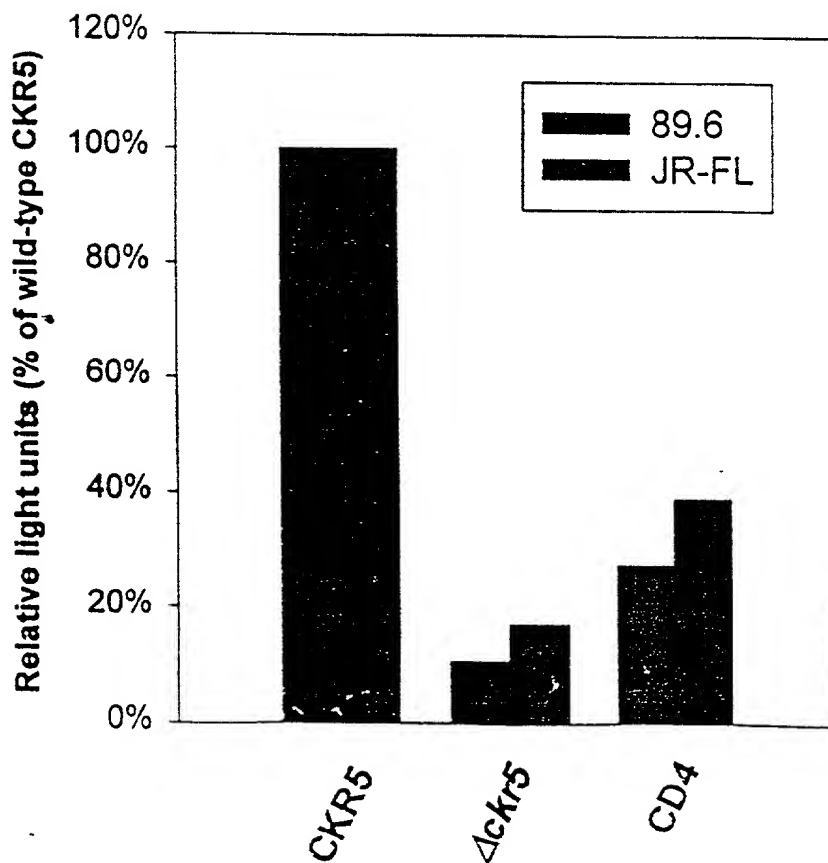


FIG. 7b

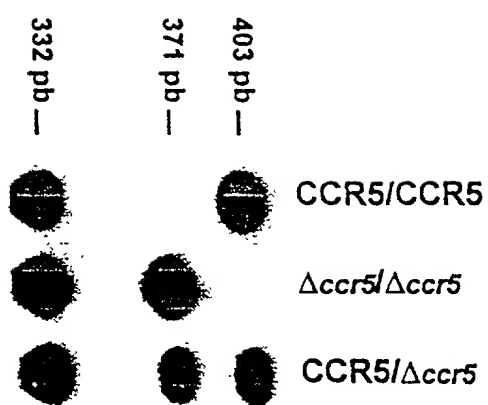


FIG. 8

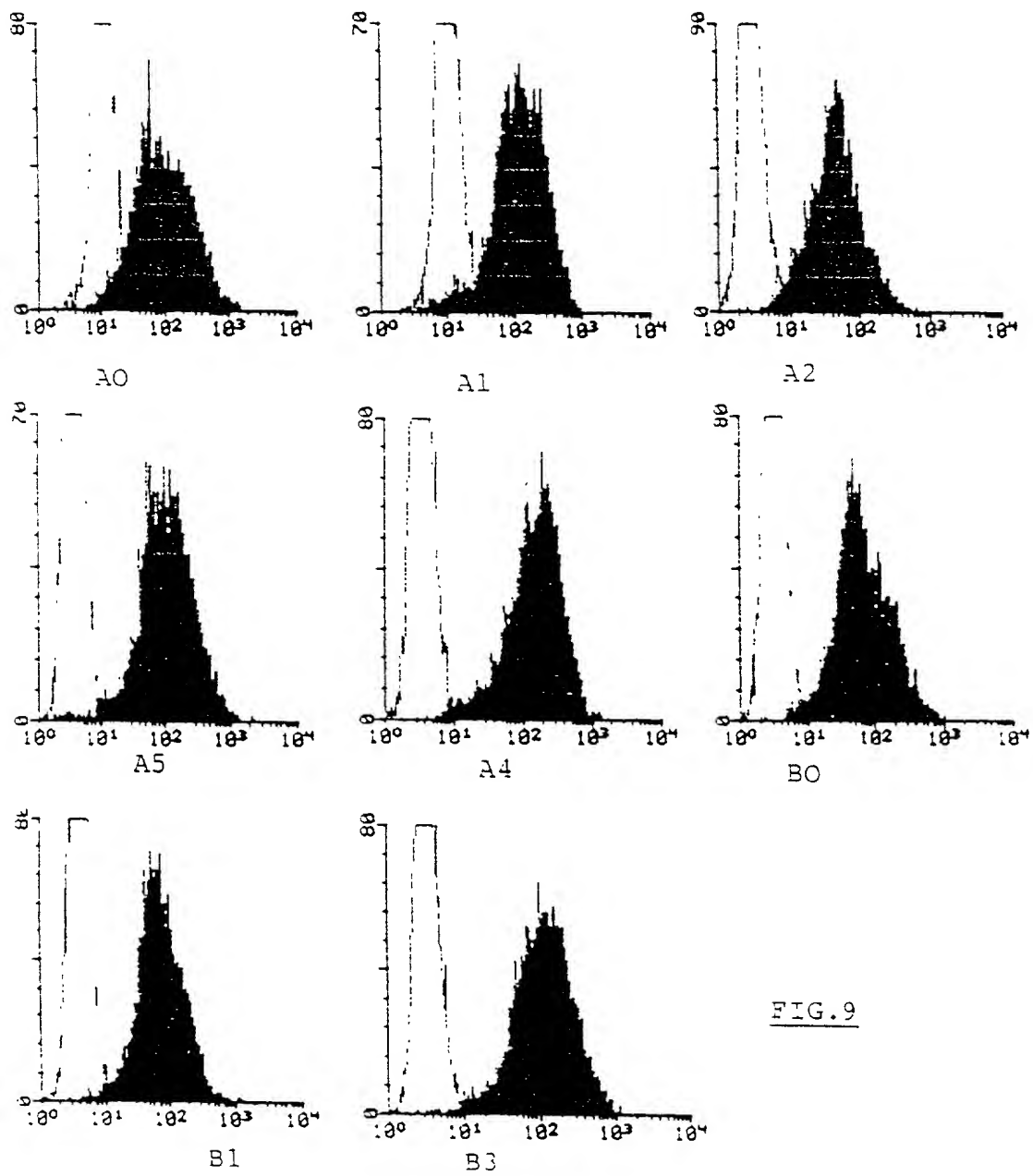


FIG. 9

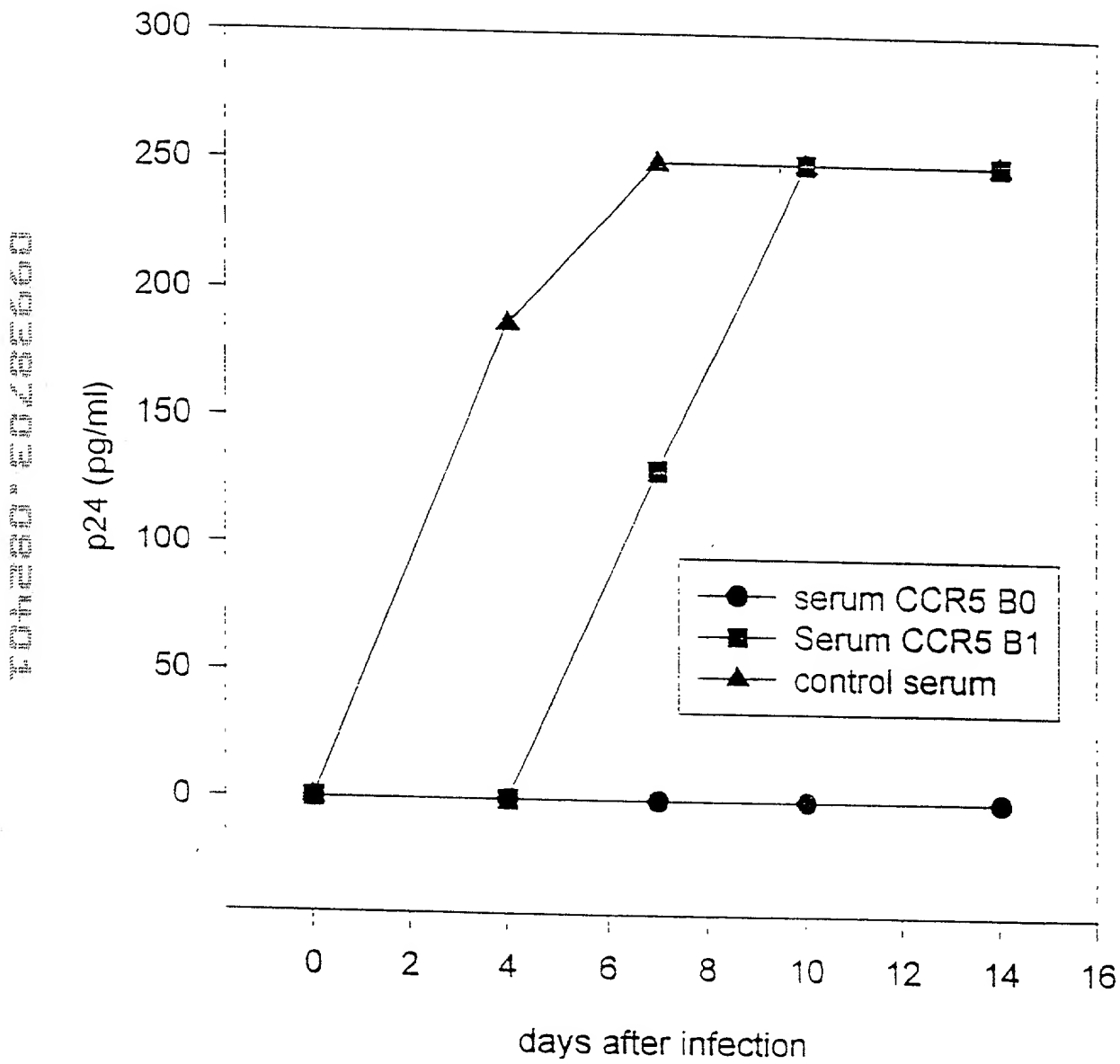


FIG.10